

Application No. 10/808,827

Reply to Office Action

*REMARKS/ARGUMENTS**The Pending Claims*

Claims 1-4 and 7-23 are pending. Claims 1-4 and 7-21 are directed toward a polishing pad. Claims 22-23 are directed toward a method of polishing with the aforementioned polishing pad. Reconsideration of the pending claims is respectfully requested.

The Amendments to the Claims

Claim 1 has been amended to incorporate the subject matter of claim 6. Claims 5 and 6 have been canceled. No new matter has been added by way of these amendments.

Summary of the Office Action

The Office Action rejects claims 1, 7-16, and 22-23 under 35 U.S.C. § 103(a) as allegedly unpatentable over U.S. Patent Publication 2002/0016139 (hereinafter "Hirokawa et al.") in view of U.S. Patent 6,832,950 (hereinafter "Wright et al."). Claims 2-6 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Hirokawa et al. in view of Wright et al. and U.S. Patent 6,168,508 (hereinafter "Nagahara et al."); claim 17 stands rejected as allegedly unpatentable over Hirokawa et al. in view of Wright et al. and U.S. Patent 6,254,456 (hereinafter "Kirchner et al."); and claims 18-21 stand rejected as allegedly unpatentable over Hirokawa et al. in view of Wright et al. and U.S. Patent Publication 2003/0190864 (hereinafter "Lehman et al").

Additionally, claims 1-23 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 26-35 and 38 of U.S. Patent 6,884,156 (hereinafter "Prasad et al.").

Discussion of the Obviousness Rejections

Since the feature of claim 6 has been incorporated into claim 1, from which all other pending claims directly or indirectly depend, all of the obviousness rejections have been rendered moot except for the obviousness rejection of claim 6 based on the combination of Hirokawa et al., Wright et al., and Nagahara et al. Applicant respectfully traverses the

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obviousness rejection because the combination of references fails to teach or suggest all of the claim limitations. In particular, the combination of references fails to teach or suggest that the hydrophobic region is adjacent to and completely surrounds the endpoint detection port.

The Office Action asserts that Wright et al. discloses "an endpoint detection port (Figure 1) (140) formed with a ring a [sic] hydrophobic material surrounding an aperture (Column 4, Lines 45-48) (Figure 2) (114)" (Office Action, page 3). Applicant respectfully disagrees. Wright et al. states that "[t]he material from which window 140 [i.e., the endpoint detection port] is formed can be hydrophilic or hydrophobic" (col. 4, lines 45-46). Thus, the section in Wright et al. relied upon in the Office Action teaches that the endpoint detection port itself can be formed from hydrophobic material, but is silent in regards to any material adjacent to and completely surrounding the endpoint point detection port. In fact, Wright et al. teaches that the material surrounding the endpoint detection port, covering layer 120, can be formed from the same materials available in IC-1000 or IC-1010, two commercially available polyurethane polishing pads that are hydrophilic (col. 3, lines 51-54). Therefore, Wright et al. teaches or suggests that the endpoint detection port is surrounded by hydrophilic material.

The Office Action further asserts that "Nagahara et al. teaches of a polishing pad having a plurality of alternating concentric regions (Figures 1a, 2b, and 3b) including a hydrophobic region formed about the perimeter of the polishing layer and another hydrophilic region, and wherein a detection port is completely surrounded by a plurality of hydrophobic and hydrophilic regions" (Office Action, page 4). Applicant respectfully disagrees. Nothing in Nagahara et al. teaches or suggests an endpoint detection port. The Office Action fails to particularly point out where such a teaching can be found, other than generally identifying Figures 1a, 2b, and 3b. However, Figure 1a simply shows the wafer 12 in relation to polishing pad 10 (col. 6, lines 23-38). The wafer 12 oscillates during the polishing operation, as shown by the wafer in position 12' (col. 6, lines 31-36). Thus, the "wafer track area," which experiences higher polishing activity, is defined by the boundaries 14 and 16 (col. 6, lines 28-31 and 36-39). Figure 2b and Figure 3b show a pad comprising a center area, interior and intermediate annular areas, and a peripheral layer with different physical properties, while Figure 2b further shows the aforesaid polishing pad in relation to a wafer

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102 rotating in the same direction as polishing pad 100 (col. 7, lines 11-17, and col. 10, lines 12-14). Thus, Nagahara et al. also fails to teach or suggest an endpoint detection port adjacent to and completely surrounded by a hydrophobic region.

Finally, the Office Action concedes that Hirokawa et al. fails to disclose an endpoint detection port (Office Action, page 2).

Since Wright et al., Hirokawa et al., and Nagahara et al., either alone or in combination, fail to teach or suggest every element recited in the pending claims, the obviousness rejection is improper and should be withdrawn.

Discussion of the Obviousness-type Double Patenting Rejection

The Office Action asserts that claims 1-23 of the present application are not patentably distinct from claims 26-35 and 38 of Prasad et al. since both are "directed to a polishing pad having two materially different surfaces formed as hydrophobic and hydrophilic regions, and said polishing pad also including an *in situ* endpoint detection system" (Office Action, pages 6-7). Applicant respectfully traverses. Claims 26-35 and 38 of Prasad et al. are directed to an optically transmissive polishing material comprising a first transmissive *layer* and a second transmissive *layer* that are joined together. Thus, the second transmissive layer is not part of the polishing surface. As such, claims 26-35 and 38 are not directed to a polishing pad having two materially different polishing *surfaces* and an endpoint detection port, let alone an endpoint detection port adjacent to and completely surrounded by a hydrophobic region as required by the pending claims. Applicant respectfully requests that the obviousness-type double patenting rejection be withdrawn.

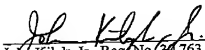
Conclusion

Applicants respectfully submit that the patent application is in condition for allowance. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

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Respectfully submitted,


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